Summary of Comments and Issues Identified from Public Scoping

Cumulative Impacts

- Risks are addressed only on the incremental increase in pollutants. Both the increase and Trident's current levels of pollution emissions should be considered in the risk assessment

- Consider the cumulative effects of COPC's on aquatic and terrestrial organisms arising from emissions of tire burning and the existing coal/coke combustion

- The scope of the EA was too narrow and it has not been demonstrated that burning tires would pose a negligible risk. The EA does not count background risk- what is the total risk, not the incremental risk

- The EA addressed only the incremental increase in harmful emissions attributed to the burning of tires, which could dramatically underestimate the cumulative impacts of multiple contaminants

- The DEQ has erred in the risk analysis by failing to consider background ambient air quality and existing emissions at the facility

- Holcim is already burning large amounts of industrial wastes and therefore it's total emissions- not just those resulting from tire burning should be considered when assessing health risks

- Urge DEQ to read the statutes and consider and mitigate cumulative impacts to guarantee that the risk to public health is negligible

- The health risk assessment has only considered the incremental increase in pollutants from burning tires without considering the emissions the plant is already producing, nor have background and ambient level in the valley been considered

- The two most important sections in MEPA for DEQ to consider are the cumulative impact analysis and the analysis of alternatives

- Our most serious concern with both the permit and the EA is the failure of the agency to consider background concentrations and existing emissions when analyzing the risk posed by emissions from burning tires.

- Cumulative effects were not sufficiently addressed

Alternatives

- The conversion of the Trident facility to a dry kiln process kiln should be examined as an alternative. Conversion to a dry process kiln would increase fuel efficiency and save money

- If the objective is to lower operational costs of the facility, switching to a dry kiln would lower emissions and lower operational costs, yet this was not considered

- DEQ should consider the alternative that Holcim, rather than burning tires, might want to improve the fuel efficiency in their plant or convert to a dry process kiln which is more efficient

- The two most important sections in MEPA for DEQ to consider are the cumulative impact analysis and the analysis of alternatives

- Some of the alternatives that should have been analyzed because they could lead to lower fuel costs and lower hazardous air emissions include switching to a dry-process kiln, installing a preheater/precalciner, requiring the company to use shredded tires with the steel belts removed, and requiring a NOx afterburner, among others.

Existing Trident Operations/Upsets

- The Trident facility has a very poor compliance record

- Permitting the plant to burn tires, which has experienced an unacceptable number of upsets year after year is irresponsible

- Despite the fact that the Holcim plant has had previous infractions/upsets, DEQ has never fined them. What is DEQ's plan of action for future violations?

- The Trident Plant cannot comply with its existing emission limits. In 2002, the facility experienced a multitude of equipment failures and upsets, which resulted in more than 500 hours of excess emissions (more than 6% of operating time). Montana law states (17.8.749) that a new permit may not be issued unless a facility can demonstrate that it can be expected to operate in compliance with existing air quality standards.

- DEQ's preliminary permit conditions would allow Holcim to continue to burn tires even when the kiln is experiencing upset conditions and the pollution control device is turned off, allowing uncontrolled emissions to escape. Insertion of tires into the kiln would be halted only when the duration of an upset exceeds 15 minutes. This is troublesome particularly because Holcim's outdated wet-process kiln experiences

frequent upsets, many of which are less than 15 minutes long. DEQ needs to conduct a more thorough review of the impacts of potential upset emissions

- Length of Upsets in acute risk calculations not clear, and underestimate the length of upsets that are likely to occur. Should include start-up and shut down in the analysis

- Holcim's poor compliance record with respect to prior air quality permits

- Concerned about compliance and enforcement

- The plants poor compliance record needs to be considered when determining health impacts of toxic emissions

- According to the EPA Enforcement & Compliance History online, Holcim has been classified as a " high priority violator" for the last three quarters of 2003. The EIS should take into account this fact in assess the plant's compliance history as a reflection of their ability to adhere to EPA and DEQ regulations

- The DEQ should justify how the negative impacts of several 14-minute upsets spread out over the course of many hours can be considered to be less significant than the negative impacts of a single 40-50- minute upset. This is clearly not just a hypothetical situation, but one based on actual events at this facility. This fact must be taken into account. Once an upset begins, the mechanism that feeds tires into the kiln should immediately be shut off and not restarted until the kiln has stabilized for at least an hour.

- The fact that this facility has so many upsets each year and seem to have poor control over its process indicates a need for frequent particulate and opacity monitoring to guarantee that emissions from this proposal will not jeopardize public health or the environment.

- This permit relies heavily on proper design, combustion and operation for controlling CO and HAPs. This is of grave concern because the compliance record of the Holcim Trident plant indicates that the facility has difficult controlling its process. The fact that the facility operated in upset mode 6.2% of operating time in 2002 is a very strong indicator that reliance on this type of control is seriously flawed.

Proposed Trident Facility Modifications to Burn Tires

- The lack of design specifications on Holcim's modification leads to major questions concerning dioxin formation

- Require Holcim to provide detailed descriptions and diagrams of the modifications to the kiln necessary for the insertion of tires for DEQ approval and public review

- Can the DEQ provide rigorous evidence that the temperature conditions for dioxin formation will be minimized to acceptable degree?

- DEQ should request that Holcim provide detailed, clear technical specifications for the burn apparatus and procedures

- Need detailed design specifications of gate system to drop tires into the kiln to be able to address: 1) effects of air leakage into the kiln on dioxin formation, 2) changes in stack emissions of carbon monoxide, sulfur dioxide, nitrous oxide and ozone 3) possible increased noise levels (an issue in other communities with tire burning facilities)

- Application lacks critical design, construction and operating details

- The DEQ must consider different methods for inserting tires in the kiln. Until these details are available about the design of Holcim's process it is not possible to determine the effects of kiln performance and emissions, particularly stack emissions

- Without "drawings, blueprints, specification or other information adequate to show the design and operation of the process…" (ARM 17.8.748 (4)) the application has failed to address how the modification will affect the temperature profile in the kiln and the resulting production of hazardous pollutants.

- Specifically, the design specifications should allow for great flexibility and control over the feeding of tires into the kiln; the modification should be designed such that the startup and shutdown of the tire-feeding mechanism can be accomplished immediately in the case of a malfunction or upset. Furthermore, the gate should be designed in such a way as to prevent the escape of gases into and out of the kiln. Without detailed design specifications, one of these important functions can be evaluated. An analysis of the tire insertion system's impact on the combustion process and the plant's production of pollutants has the potential to change the outcome of Holcim's health risk assessment and must be analyzed prior to issuing a permit.

Air Quality, Emissions and Dispersion Modeling

- The emissions limits on hazardous air pollutants, especially heavy metals and volatile organic compounds are much too high

- Source tests should be conducted under conditions representative of Holcim's operating conditions

- Burning tires would release unacceptable amounts of dioxin, furans and heavy metals into the environment

- Report fails to adequately describe data collection methodology including location and elevation of the on-site station at Trident relative to the point source location. There is no diagram or site map of the complex other than a small scale locator map showing plant boundaries.

This information should be included in the EIS

- Report fails to acknowledge that there has been a weather station at Trident since 1948 (USDA Forest Service Air Resource Management Report, Region 1-Missoula, MT 1996. Where is this data and why wasn't it used in the air dispersion modeling?

- Report cites one year of data collection (met data). What happened to the previous 52 years?

- Available surface weather data from Gallatin field is not used, nor is wind data from the MSU weather station in Bozeman. No explanation why historic NWS modeled upper air climatology data was not used

- Report demonstrates modeling results by predicting concentrations at receptor sites at 1,219 meters easterly and 1,316 meters northerly. There is no indication of concentrations beyond these points. Is there a barrier beyond which all deposition stops?

- No modeling is really real until tested under operating conditions

- There is no visual depiction of a deposition map to allow the public or decision makers to see where the plume is going and what's in the plume at various locations in the valley

- Why was wind data from Great Falls used?

- A mass balance of the air model should be conducted

- Air modeling failed to consider long distance transport in the model. Question the model boundaries. Unknown whether concentration at greater distances than model boundaries would violate Clean Air Act or Montana Clean Air Act

- The model does not seem to consider deposition as a topic for study, even though this is the primary mechanism that pollutants will reach humans and animals

- A deposition map would demonstrate where the model is transporting pollutants and account for their buildup over time. Similarly, a map of ambient concentrations would assist in determining whether the model is accurately transporting materials and which areas are of greatest concern. Without scrutinizing a deposition and/or concentration map, how can the model be evaluated for accuracy and reliability?

- The air dispersion modeling is grossly flawed. Holcim's local surface data is suspect, the meteorological station was sited inside the river canyon where air currents tend to follow the flow of the river, whereas the stack protrudes above the canyon rim where winds are primarily from the west

- Holcim's emissions from tire burning were predicted through the use of data from other cement plants of varying sizes and different processes, using a variety of fuel types. Data was not available for many pollutants of concern. The toxicologist hired by DEQ to review Holcim's risk assessment stated in a memo that " there is substantial uncertainty regarding the accuracy of the emissions " and that Holcim's approach " may be subject to controversy"

- The air dispersion model relies heavily on a local meteorological station sited in the river canyon. These data show the dispersion to be predominantly in a northeast direction toward mostly unpopulated rangeland and away from the Gallatin Valley. The problem is that emissions from the Holcim plant come from a 40 meter stack. The prevailing wind direction at the top of the stack is different from that in the bottom of the canyon. Emissions from the top of the stack clear the canyon walls and travel primarily toward the east, following the prevailing wind for the region and toward the Gallatin Valley. Dr Joe Caprio, professor emeritus of agricultural climatology at MSU and former Montana State Climatologist has gather 40 years of meteorological data for the Gallatin Valley. These data were not consulted for Holcim's risk assessment. His data also show that precipitation in the Gallatin Valley is generally associated with storms from the northwest and can be expected to collect the contaminants being emitted from tire burning at the Holcim plant and deposit them over the fields of the Gallatin Valley.

- The test burn data is not from comparable facilities

- It is not appropriate to use a 95% UCL when the sample sizes are so small

- The possibility that Class I airsheds will be impacted was not addressed

- Uncertainties in the risk analysis specifically where projected emissions at Trident were extrapolated for other kilns and data is extremely sparse

- Increases in air pollutant emissions and other environmental impacts associated with transportation of the tires to the facility

- The air dispersion model used model boundaries that did not extend far enough from the plant. The maximum plume concentrations at ground level do not occur until approximately 20 to 30 km away far outside the existing model boundaries

- Lack of a mass balance in the model used to prepare the EA which would make very clear what fate each pollutant coming out of the plume will have: deposition, transport out of model boundaries or conversion to other chemical processes.

- Omissions in the EA include lack of contour maps of the deposition and ambient concentrations of each pollutant in the model at steady state. The maps should be provided for time intervals such as hourly, daily, weekly, monthly and yearly in order to examine the temporal variation of emissions and resulting deposition

- Holcim submitted inappropriate test burn data on which to base its analysis. Almost none of the data came from scenarios similar to the Trident kiln

- Holcim did not submit data for many of the hazardous compounds of concern

- Model size-The model in the EA was only approximately 8 to 10 kilometers. Pollutants are transported great distances and with the 40 meter stack such as Holcim's pollutants will carry 20 to 30 kilometers well beyond the model boundaries of the last model. The EIS needs a deposition contour map

- Background air quality measurements should be obtained for the EIS at several locations in Gallatin County. Emissions from the Luzenac plant in Three Forks should be quantified

- Map graphics should be included showing the Gallatin Valley and topographic reference. Larger scale topographic maps should indicate stack location, meteorological stations, Holcim property boundary, agricultural and residential land use patterns and urban areas

- The original permit application showed results of dry deposition modeling. The EIS should analyze wet deposition as well

- The Gallatin Valley is prone to weather patterns that can trap pollutants within a mountainous basin. The Gallatin Valley has the foreseeable potential for concentrating pollutants that otherwise would be dispersed in other model areas used in the EA

- The temperature inversions which are common in the winter and obvious in the Gallatin Valley trap nearly all of the toxic pollutants emitted in the area and this often includes pollution from much further west than the Three Forks area.

- A serious study of the wind patterns, unique conditions of this valley and entrapment of emissions is necessary in the EIS

- The air dispersion model is a key component of the overall EIS, since it is a guide to where the pollutant plume will travel and thus the areas affected by pollutant deposition. The downstream effects of emissions from the Holcim plant on air quality, water quality, vegetation, game and fish populations and human health can only be accurately analyzed in the EIS if the air dispersion model is accurate

- The current dispersion model is not accurate and thus it should be a high priority of the EIS to commission a more comprehensive dispersion model by an independent consultant other than Bison Engineering incorporating; 1) a larger grid domain to include the whole Gallatin Valley 2) Meteorological data that reflects the E-W/NW-SW wind flow, due to channeling effects of the Gallatin Valley 3) temperature inversions 4) Variable pollutant loads and particle size distributions 5) a mass balance and contoured pollutant dispersion distribution maps

- We are also concerned about other substances that do not have emission limits. Test burns show that zinc and hydrogen chloride increase with the burning of tires. The November 1997 EPA report "Air Emissions from Scrap Tire Combustion" states, "TDF contains significant amounts of zinc, since zinc is used extensively in the tire manufacturing process." Test burns conducted in a rotary kiln simulator showed that zinc emissions increased 100-fold with 17% TDF when compared with 0% TDF. This should be taken into account in determining estimated dioxin and furan emissions (Source: "Metals As Catalysts During the Formation and Decomposition of Chlorinated Dioxins and Furans in Incineration Processes," A. Addink and J. Schoonenboom, Air & Waste Manage. Assoc., Vol. 48, pp. 101-105. Available at: http://www.ejnet.org/dioxin/metalcatalysts.pdf).

- The very small numerical limit on polycyclic aromatic hydrocarbons does not take into account the emissions of PAHs associated with burning petroleum coke. According to written communication with John Raudsep, the compliance officer for the Trident Facility, Holcim burns up to 40% coke in its Trident kiln although it is permitted to burn up to 100%. Significant increases in PAHs are associated with the combustion of petroleum coke as well as with the burning of tires. Neglecting the existing high emissions of PAHs lead to errors in the risk assessment.

- Emissions from the clinker cooler and other sources at the kiln must be analyzed

- The data from the local meteorological station set up by Holcim is also suspect. The station was sited inside the river canyon where air currents tend to follow the flow of the river, whereas the stack protrudes above the canyon rim where winds are primarily from the west.

- The analysis failed to consider the background emissions from Luzenac, a major source of emissions in the immediate area.

- The analysis used ambient air concentrations from a remote site in eastern Montana, which are unrepresentative of the site in question.

- The analysis failed to consider emissions from the clinker cooler.

- The emissions rates for lead (which was deemed to be 0tpy) and VOCs (which were estimated to be less than VOC HAPs) are grossly underestimated.

- A quality assurance validation should be been submitted to assess the accuracy of Bison's calculations, given that data were repeatedly "reformatted" during the analysis and substitutions were made for "missing" and "invalid" data.

- One column and two rows of receptors were removed from the receptor grid because the elevation data was insufficient, though these receptors were located in the direction of greatest concentration.

- No hazard contour map of the dispersion concentrations was provided, and there is nothing that indicates graphically where the point of highest concentration is located.

- Minor errors abound as well, including the statement that "the closest Class I area is the Gates of the Mountains Wilderness," when in fact it is Yellowstone National Park.

- Holcim's assumption that 20% of dioxins/furans leave the kiln as particulate is based on an industry report of a test burn conducted 16 years ago at a waste incinerator burning chipped tires, a scenario totally inconsistent with burning whole tires in a cement kiln.

- The discussion of CO2 emissions is wholly inadequate. What would happen to CO2 emissions if the kiln switched to a dry-process kiln? This is an analysis that must occur before the DEQ can make an informed decision and guarantee that this alternative is the least onerous way to achieve the objective for this project. Please explain in detail the expected ration of CO to CO2 emissions at this cement kiln. Please provide a scientific justification for the statement that CO2 emissions are likely to increase only 1%. Also, it should be clearly stated in this discussion that CO2 is a greenhouse gas and is thus a pollutant of concern.

Pollution Control Technology

- Holcim's finding that no additional pollution control technology is needed is unacceptable

- No additional pollution control technology is being proposed by Holcim to control increased pollution

- Process Monitoring- Though the economic analysis (in the air permit application) somehow deemed all pollution control technology as economically infeasible; there are monitoring processes that could be implemented at minimal cost. Oxygen monitoring and temperature profiling in the kiln could help verify the combustion performance in the kiln. Giving DEQ ongoing reports of the kiln temperature profile could help determine when and where potential parameters existed for dioxin formation in the kiln. This also would give an indication of whether air leakage into the kiln gate system is changing the kiln environment

- Would like to see Holcim burn tires under monitored scrubbers and instruments that monitor the air contaminants

- Holcim's estimates of what their control technologies would cost them are way beyond what these control measures have cost other companies around the country. There needs to be an independent assessment of the costs of pollution control technologies

- The pulse on increased toxins both aqueous and particulate due to snow pack effects coincides with the start of the growing season and thus the effects of this in stunting/reducing/preventing plant growth should be examined in the EIS.

- There are no controls being proposed for gaseous emissions, and if the electrostatic precipitator (ESP) is not operating, there will be no controls on particulate emissions from the kiln. The ESP must be off-line during most upset conditions in the kiln because it is electrically charged and there is a danger of explosion. Either the facility should find a way to control gaseous emissions and have a backup for particulate emissions when the ESP is not operating, or the facility should not be allowed to burn substances like tire that have the potential to release large amounts of hazardous air pollutants.

- The claim that no add-on BACT control for CO has been required at a cement kiln is incorrect. A thorough search of the RACT/BACT/LAER Clearinghouse reveals the following:

    - The Holcim cement plant in Monroe County, Michigan, uses the following add-on controls for CO: fabric filter, slurry scrubber, and regenerative thermal oxidizer (RTO).

    - The North Texas Cement Company in Whitewright, Texas, uses the following add-on controls for CO: scrubber.

    - The Continental Cement Company in Ralls County, Missouri, uses the following add-on controls for CO: Pyroclon.

    - The claim that no add-on BACT control for HAPs has been required at a cement kiln is incorrect.

    - The Holcim cement plant in Monroe County, Michigan, uses the following add-on controls for VOC's: regenerative thermal oxidizers, three in parallel per kiln; standby activated charcoal for backup.

- The cost analysis for carbon adsorption should be recalculated, as it appears to overstate the cost considerable.

- In addition, the indirect annual costs of operating the carbon adsorber system have been miscalculated and overestimated. These numbers must be recalculated. Also given the fact that the Holcim facility in Monroe County, Michigan, currently uses carbon adsorption to control VOC's this technology should be more carefully considered as a feasible option for the Trident facility.

Environmental Impacts

- Burning tire would produce dangers to the residents of Gallatin County, to those further downwind, to those consuming agricultural products from the area and to wildlife

- Impacts of the increase in trucking should be evaluated in the EIS

- What happens to particulate matter deposition on snow pack and when it melts, are the pollutants concentrated at a point on the land surface?

- The EIS should examine the impact of pollutants on our hi-tech industries. And the impact of this project on the ability of local communities to recruit and retain the entrepreneurs and business people that are coming here to create these businesses based on the quality of life

- Consider Environmental Justice and prevent the disproportionate dumping of waste on populations of minority rural and poor people

- The future medical costs to the exposed population due to increased emissions must be included in the EIS

- The EIS needs to analyze the impact of tire burning on the tourism industry specifically in regards to the Lewis and Clark Bicentennial

- EIS should examine the issue of odors associated with Holcim's VOC violations

- EIS should take soil samples around the facility and at various locations to establish a baseline for contaminants

- The worst-case scenario for runoff into area waters was not analyzed. If there were a fire at the facility and tires were ignited, there could be significant runoff into nearby waterways. The impact from such a scenario does not appear in the EA, but given the tire fires that have occurred in this state in recent years, it is not a far-fetched scenario and should be analyzed.

- Impacts of air pollutant emissions on surface water quality

Human Health Risk

- Emissions from tire burning of large amounts of industrial waste and tire burning combined should be considered when assessing health risks

- Health risk due to human ingestion of dioxin through meat and dairy products were severely underestimated in Holcim's analysis and need to reassessed

- Human health risk assessment underestimates the risks due to ingestion of dioxin via meat and milk

- What is going to be the impact on cancer rates? And breast cancer rates?

- A small amount of a toxin, an amount that is considered to be a negligible risk by itself, can be sufficient to push people over the toxic threshold when it is added to their body burden

- Lifetime cancer risks for dioxin exceed the limit for negligible risk

- Back ground exposure to dioxins is not properly accounted for when examining the non-cancer health effects of dioxins

- Bozeman City Commission believes that Bozeman City residents will be put at risk by virtue of Bozeman's location downwind of the pollutants emitted from Trident stacks

- The calculated cancer risk outcomes (in the human health risk assessment) are sufficiently close to threshold acceptable levels so that these concerns represent qualitatively significant problems areas not qualitative knit-picking

- Multiple ingestion pathways for exposure to contaminants

- The dose-response relationship data used in the risk assessment does not account for interactions and cumulative impacts

- Health risks due to human ingestion of dioxin through meat and dairy products were severely underestimated in Holcim's analysis and need to be reassessed

- The risk of dioxin and heavy metal exposure to Holcim's employees and their families need to be more adequately addressed

- The health impacts of simultaneous exposure to multiple toxins needs to be considered as the effects are not just additive but synergistic

- 98 percent of physicians in the area are in support of the EIS being conducted. Lead and mercury emissions must be examined thoroughly in the EIS as thresholds for safety continue to decline. Mercury and lead are biocumulative; they persist and are not degraded or broken down in the environment. Consider all exposure pathways.

- The EIS must consider the costs of yearly testing of local fish so doctors can properly advise their pregnant patients.

- The EIS must consider metal sediments in the water and health risk from ingestion of most local fish

- Because lead exposure will increase if tires are burned, the EIS must consider the economic impacts of yearly lead testing at approximately $330,000 per year. If future testing proves that levels do indeed rise the increasing cost of treatment need to be considered in the EIS

- The EIS needs to consider the cost of establishing monitoring programs for children in the county. Biomonitoring is being used around the country and has enabled EPA to determine threshold levels for some chemicals

- The EIS must evaluate the potentially significant risks to humans from consumption of contaminated trout, look at risks from dioxin, mercury, cadmium and chromium

- The EIS must evaluate the risk to humans from consumption of contaminated game animals, antelope, mule deer and white tailed deer in the area surrounding the Holcim facility

- Review public health data from communities surrounding similar tire burning facilities in the US. Gather data on the incidence of cancer, chronic respiratory disease, congenital defects, spontaneous abortions, and mental psychological disorders in the communities dating back as long as those facilities have been operative. Holcim should finance the gathering of this data

- Concerned about the health risks faced by employees at the Trident plant

- The hourly emissions rate for mercury translates to an astounding annual rate of 89 pounds in addition to current emissions. Recent reports show that mercury is even more harmful to pregnant women and children than thought before (see attached article from the Journal of the American Medical Association, April 2, 2003). This is particularly troublesome given the fact that mercury is a persistent and bioaccumulative toxin. Mercury becomes extremely dangerous as it is broken down by bacteria in water to become methyl mercury and subsequently enters the food chain. Given the fact that the Holcim Trident plant is on the banks of the headwaters of the Missouri River, which supports fisheries that can easily become contaminated, any increase in mercury is a cause for serious concern. Testing of fish in Lake Hebgen in Gallatin County has shown that mercury contamination in this area is already a problem. A fish consumption advisory has been issued for this lake due to mercury levels found in resident fish populations. The emissions limit established in this permit is a six-fold increase over the mercury emissions reported by Holcim in the 2000 TRI database. Please explain how this constitutes a negligible risk. We are also concerned with the emissions limit for lead, which translates to 129 additional pounds annually (for a total of nearly 300 pounds per year). A study published in the April 17, 2003, edition of the New England Journal of Medicine found that lead concentrations at levels below current guidelines were far more dangerous to children than previously thought.

- We believe the risk assessment severely underestimates the risks to human health and to the environment. We believe that a properly conducted risk assessment may very

well indicate that the project poses greater than a negligible risk to human health and welfare.

- We are very concerned with the general assumptions established in conjunction with the upset exposure scenario (page 25). First, assumption 2, "duration of an upset was estimated based on upset data collected in 2000 and 2001," ignores the fact that a significant change in fuel composition was made in 2002, which led to more upsets of longer duration. Second, there is not information provided to verify assumption 3, "kiln temperature remained sufficiently elevated during an upset such that HAPs emissions were unchanged." Please provide documentation supporting this claim. Furthermore, if the kiln is being shut down due to a severe upset, the flow of fuel into the kiln is halted. Wouldn't this lead to a decrease in the temperature in the kiln even though tires are still present in the kiln? The assumption that kiln temperatures would remain elevated is not a conservative assumption, as it clearly underestimates the worst-case scenario. Third, assumption 4, "only particulate-based HAP concentrations change during an upset" is also counter to what is known about upset emissions. Gaseous organic HAP formation could increase significantly if the kiln temperature decreased or fluctuated due to an upset. All of these assumptions have the effect of significantly minimizing risk due to acute exposure. The DEQ should consider what the worst-case scenario could be, not what the average worst-case scenario might be. The assumptions of this current analysis have the effect of diluting the potential adverse impacts of acute exposure during upset conditions.

- Why weren't other exposure pathways considered for upset conditions? When upsets occur, the risk posed by the other pathways frequently increases and should be considered. Simply because the inhalation pathway might be the most significant does not mean that other pathways should be ignored.

- Using the average duration of an upset to calculate risk is not prudent. If the risk assessment is supposed to look at worst-case scenarios and determine that the risk would be negligible, then DEQ should not take an average duration for upsets but instead should look at the time of the longest upsets. The risk assessment for upset conditions must analyze worst-case scenarios. That means the DEQ should be looking at 24-hour upsets, not 30-minute upsets.

Ecological Risk

- Risks from dioxin in beef and milk are significantly underestimated

- West and north of the Trident facility Wheat Montana grows all of their wheat and Darigold have cattle that graze to feed and supply milk (35% of state production). Without recommend upgrades to Holcim's kiln farming, ranching, livestock grazing, dairy production and fish and game populations will be directly affected

- Holcim's risk assessment did not consider the impacts of mercury emissions to fish

- Risk due to ingestion of dioxin via meat and dairy products was severely underestimated by a factor of 1000. In addition, the total exposure to dioxin was significantly underestimated and probably exceeds Montana's negligible risk standard.

- Impacts of hazardous emissions on local game populations were not considered. Although adjacent landowners have confirmed that large resident populations of antelope, mule deer and white-tailed deer graze on the property surrounding the Trident facility, the risk assessment did not consider impacts to any mammal larger than the red fox, citing unavailability of data.

- What impact will emissions of mercury have on our local trout population? Neither Holcim's ecological risk assessment or DEQ's environmental assessment addresses this issue satisfactorily. This situation has the potential to seriously damage the reputation of our Blue Ribbon fisheries which attract sportsman from all over the world, contributing significantly to Montana's economy

- The EA does not adequately address the environmental and human health risks from bioaccumulation in local trout populations and local game populations of other contaminants from tire burning such as lead, other heavy metals and dioxins and furans

- There is no mention of the antelope herd in the area

- The fishery in the Three Forks region is important economically and culturally to Southwest Montana. It holds important population of wild rainbow and brown trout. The forks of the Missouri is one of four reintroduction areas for fluvial artic grayling in the State on Montana. The permit and EA have incompletely analyzed all potential pathways for metals and VOC's into the Missouri River and its aquatic community

- The Screening Level Ecological Risk Assessment does not include an evaluation of the bioaccumulation or bioconcentration of metals and VOC's. Especially concerned with fate of mercury, cadmium and chromium all of which in low concentration are harmful to aquatic life.

- The EA does not include a detailed analysis of exactly how plant upsets could quantitatively affect pollutant levels in local soil, groundwater and surface water

- SLERA: The pronghorn antelope would be more valid the rabbit used in the SLERA. If necessary data for pronghorn is not available the mule deer would be more suitable

- Require some contaminant monitoring (mercury, TCDD's and others) in fish as part of the permit. Need to sample upstream of the Trident plant in the vicinity of the three forks of the Missouri) as well as in the vicinity of the plant.

- The impacts of hazardous emissions, including mercury, on local fish and game populations and on endangered species native to the area must be assessed

- The EIS must address all potential pathways by which toxic metals and hazardous compounds from tire burning could impair the health of aquatic life in the Missouri headwaters. This includes contaminants entering the streams from groundwater as well as surface runoff

- The EIS must consider the impacts of tire burning on sensitive wildlife species including the Great Blue Heron and the Bald Eagle

- Toxicological bioaccumulation studies that were conducted for the EA take no account of the snow pack concentration effects and should be considered in the EIS

- We have recently learned that a large dairy facility, the Bostana Dairy, is being permitted by the DEQ to establish a concentrated animal feeding operation, which will confine 3,360 cows in close proximity to the Trident plant. Thus far, there has been no analysis of how hazardous emissions from waste incineration might impact the economic viability of dairy production located directly downwind of the facility.

- The EA fails to provide information by which the general public can determine whether the risk assessment was done properly and whether indeed the "likelihood of adverse effects would be low". Although the EA states which species were considered and that ingestion, inhalation, and direct contact in water were modeled, there are no numbers the public can use to verify these calculations. The EA fails to list what variables went into analyzing the exposure, what figures were used for uptake, what "highly conservative exposure assumption" were used, what the result of the hazard index analysis were, what numbers for baseline risk were assumed, whether the risks posed by burning glass or petroleum coke were considered in the risk analysis, whether the baseline was presumed to be zero, or how low the likelihood of adverse impacts is. All of these questions need to be answered.

- Although Holcim's submittal of February 12, 2003, stated that "the list of species addressed in the screening level ecological risk assessment appropriately covers species that are representative of the area and that cover the biological food chain likely to exist in the area," there are two glaring omissions: game and fish. Although adjacent landowners have confirmed that large resident populations of antelope, mule deer, and white-tailed deer graze on the property surrounding the Trident facility, the risk assessment did not consider impacts to any mammal larger than the red fox. We find it difficult to believe that although there is abundant information on earthworms, songbirds, raptors, rabbits, and foxes, none exists for antelope or deer. In regard to fish in the adjacent Missouri River, the story is much the same. Although sediments contaminated by toxic metals (especially mercury) were identified in the risk assessment as an exposure medium, "exposure by these pathways and consequent bioaccumulation in organism tissues were not quantitatively addressed because appropriate data were not located: These issues are doubly troublesome in that many local citizens consume both fish and game that inhabit this area. It appears that wherever calculations might get close to 1 x 10-6 (negligible risk) there is "insufficient data" to perform an appropriate analysis.

- The EA claims that "The overall hazard index for the aquatic biota was less than 1.0, and the change in concentrations for COPC would not be expected to exceed the EPA water quality benchmarks for freshwater aquatic biota." How do the EPA benchmark and Montana Numeric Water Quality Standards compare to Montana's negligible risk standard? Because air pollution is deposited in the water and can change in composition to more toxic forms, DEQ should consider these changes when calculating negligible risk. In addition, it is unclear from the above mentioned statement whether current nearby water quality conditions were taken into account. By "change in concentrations" are you referring to the net increase in concentrations from emissions alone or the total resulting water quality levels incorporating current conditions plus the increased contamination from emissions? The relevant factor in determining actual risk to aquatic biota is the latter. It is meaningless to discuss comparisons with water quality benchmarks if one is make the assumption o perfectly clean receiving waters.

- According to the department, the screening level ecological risk assessment determined that "the air emissions associated with the project would not change the physical characteristics of the local soil," yet there appears to be no basis for this statement in the SLERA. It is unreasonable to assert that 129 pounds of lead and 89 pounds of mercury (in addition to existing emissions) being emitted year after year would not change the physical characteristics of the local soil.

- The EA lists a number of federally listed endangered, threatened, proposed, and candidate species in Montana, stating that "Holcim analyzed the [threatened] species in the screening level ecological risk assessment." No mention whatsoever is made of the Great Blue Heron. None of the plant species listed in the EA is even discussed, much less analyzed. Please explain why this information was ignored.

Solid Waste/Tire Issues

- Where will Holcim dispose of the toxic ash that is produced

- Tires can be breeding grounds for mosquitoes

- Holcim would need to import tires from surrounding states, making the Gallatin Valley a regional waste incineration site. Importing other states waste to incinerate in the Gallatin Valley is an issue of environmental justice that has been ignored in the environmental assessment conducted by the DEQ.

- DEQ should put conditions on the solid waste license that specify exactly how tires will be stored on site and transferred to the kiln

- DEQ should add conditions to the air quality permit and solid waste license that require Holcim to periodically conduct compositional analyses on tire samples to ensure that no tires containing pesticide residue will be incinerated

- A tire in its natural state is relatively benign compared to spewing the resulting gases from burning them. There are many uses for tires that do not required burning

- Specific limits on the number of scrap tires stored on site and the size and weight of scrap tires accepted for incineration must be established in the solid waste permit.

- Testing requirements-lack of analysis of scrap tires. DEQ should require Holcim to provide analysis information on waste tires

- The EA mentions land filling tires and using tires as a fuel source but does not consider alternatives for scrap tires. Options for reuse and recycling should be examined

- TDF and whole tires are used interchangeably- It is either one or the other

- Holcim would need to import tires from surrounding states, making the Gallatin Valley a regional waste incineration site. The importation and incineration of other states wastes in an area on intense agricultural and livestock production must be addressed

- Need to know where the tires are coming from (source of tires) what kind of tires they are. The inclusion of steel belts affects emissions. Reassess the validity of using the BTU value of tires instead of the number of tires

- The DEQ must consider how tires in Montana are currently disposed of. Another alternative was proposed by the Tire Depot, a local business in Poulson which has been collecting and recycling tires for years. The Tire Depot sends waste tires to Canada to be ground up. The ground tires are shipped back to the Tire Depot and recycled in a variety of ways. There is no air pollution associated with this process

- The term "tire " should be defined in the EIS, weight, diameter and composition limitations should be established

- Holcim should not be permitted to combust tires treated with pesticides or other substances

- EIS should define what is meant by covered storage, Will the covers be loose such as a tarp or tight fitting or will they be containers and will they be locked? Will the tires be stored on or off the ground. Will they be exposed to the elements? Accessible to insects, rodents or other animals. Describe plans to prevent water from getting into the storage containers

- EIS should describe where the tires come from, how they will enter the plant. If by truck what will be the increase in diesel emissions, traffic hazards and the costs of necessary road improvements. Who will bear the cost of road improvements? Will the truck be delivering seven days a week or just on week days? How many tires will be in each truck? How much will each load weigh? How will the increased number of

trucks on the road on school days impact safety? How will these factors impact Headwaters State Park/ Would it be safer and have less impact if the tires were transported by rail?

- Consider pre-1980 tires and the amount of moisture in the tires

- Detailed methods for identifying and excluding tires that have pesticide residue must be devised and evaluated

- Provide a plan for excluding tires that may hold moisture and infectious disease vectors

- The permit should define the term "tire." The permit should establish weight, diameter, and composition limitations on the tires Holcim is allowed to burn. A requirement that Holcim shall not combust tires treated with pesticides or any other substance should be a permit condition.

- The permit and solid waste license should more clearly define what is meant by the term "covered storage." Could this be something as simple as a tarp, which could easily be blown off by the wind? Will the covers be tight fitting or the containers locked? Will the tires be stored on or off the ground, exposed to the elements, accessible to various forms of fauna – including stray children? In addition, if the intent is to guarantee that water does not accumulate in the tire storage site, the DEQ should clearly state that no water can be present in the tire storage container at any time.

- If the purpose of the project is to reduce the volume of tires that would be sent to landfills, DEQ should consider whether this is indeed a problem or whether the current system of tire disposal meets the needs of the State of Montana. In 1998 the Environmental Quality Council conducted the only study on this subject, Status of an Alternatives for the Management of Waste Tires in Montana: Final Report to the 56th Legislature of the State of Montana, October 1998, Prepared by the Legislative Environmental Policy Office, Study Conducted by the Environmental Quality Council Waste Tire Study Working Group. After a year of study, EQC concluded, "At this time, Montana does not have a problem with waste tire management which is significant enough to warrant statewide policy changes in the current situation" p.57)

- The EQC Study estimated that Montana simply doesn't generate anywhere near the number of tires this project allows. Montana generates between 527,400 and 879,000 waste tires annually (p.6). In other words, DEQ is permitting the facility to burn approximately 100% more tires than are generated in Montana. The Holcim Trident plant would need to import tires from other states to satisfy 15% of its fuel needs.

- Where will these tires come from? How will they enter the plant? If by truck, did DEQ calculate the increased diesel emissions, traffic hazards, and the cost of necessary road improvements that would result from transporting 1.13 million tires per year to the Tridents plant? Please provide that information.

- We request that the EA detail what is meant by "enclosed containers designed for safe tire storage." DEQ should provide more specific information about how those containers will be enclosed, whether any water would be allowed to accumulate inside the container, and what type of design Holcim intends to use. Could it be something as simple as a plastic tarp tied over the tire bales? How will these be protected from strong winds?

- The description of the transportation of tires to the plant needs additional detail. How many tires will there be per truck? How much will that load weigh, and how will it impact existing infrastructure and maintenance costs for roadways? How will the increased numbers of trucks traveling on the Trident road on school days impact safety? How will diesel emissions in the area increase? Would it be safer to require that tires be brought in by rail instead?

- The EA repeatedly states that this proposal will conserve landfill space and reduce illegal disposal of tires. What information is DEQ relying on to make this generalization? Neither the solid waste license application nor the air quality permit application state that Holcim will rely on tires generated in Montana. Neither the license nor the permit require the facility to preferentially accept tires from Montana. There is no evidence that this facility will decrease illegal dumping. What program will Holcim implement to discourage illegal dumping? Please explain what the DEQ is relying on to make this generalization or delete this from the document.

Property Value, Economic and Socioeconomic Impacts

- The economic impacts to area property values and to agriculture, livestock and dairy production will be affected and must be addressed

- What impact this added dose of dioxin is going to have on the agricultural economy

- Over 35 % of Montana's milk is produced in the Gallatin Valley and the toxins resulting from the burning of tires will pollute that 35 %

- My family has started a new business in Montana that draws 98% of its income from out of state resources. We are about to expand and hire local employees to keep up with the increasing demand of my company. Until Holcim's plan for burning toxic waste in our valley has been put to rest, all of our plans will be put on hold.

- The economic implications of Holcim's proposed plan to burn tires are enormous. To allow Holcim to save a few thousand dollars a year will probably cause the local economy to lose orders of magnitude in lost revenue. Real estate prices will be attenuated or drop and companies thinking about moving to Bozeman will look elsewhere.

- Consider the economic effects on the agricultural community from Wheat Montana to the Gallatin Valley Organic Growers

- What are the economic effects on human health?

- Wheat farmers may decide that they can't farm near the plant. The perception that their products could be tainted could cause them to move and cause real estate process to drop

- The permit talks about the likelihood that people will move to the area, but the likelihood that they will move away is not discussed. There is anecdotal evidence that adjacent property owners are having trouble selling their land

- If Holcim is allowed to burn tires, the number of people who want to purchase property near the plant will be reduced and the values of the property will be reduced. This could be offset if employment at the plant were to grow but the EA says long term employment will not be affected

- Hard to quantify a cost/benefit analysis. Benefits will be enjoyed by so few. No new jobs created if Holcim allowed to burn tires and no job's lost if permit is denied. There are no benefits to the community only costs

- The EIS should make an analysis of the economic impact of tire burning on the tourism industry specifically in regards to the Lewis and Clark Bicentennial and events occurring at the Headwaters State Park, and the hospitality industries in Gallatin, Jefferson and Broadwater counties

- The economic impacts to area property values and to agriculture, livestock and dairy production must be considered

- The economic impacts to area property values and to agriculture and livestock and dairy production must be considered. Additionally impacts to businesses that have located in the Gallatin Valley for high quality of life should be considered

- Concerned the just the "perception" the burning of tires may give prospective purchasers of real estate in the valley. Even if the actual tire burning did not cause significant environmental problems environmentally, just the perception by some that it may cause property values to plummet.

- What are going to be the negative economic effects? As a cattle rancher I believe that the economic effects on meat sales must be considered. The public is increasingly concerned about food safety; beef with high concentrations of dioxin may become unmarketable some day.

- Property values of taxpayer should be protected

- Economically Montana will gain little and will probably suffer because of the heavier truck loads on our already stressed highway system.

- Incinerating tires in our local cement plant has the potential to kill our economic growth, just as WR Grace asbestos contamination has cost the residents of Libby Montana, millions of dollars in lost investment and reduced property values

- The EIS must evaluate the economic impacts on the fishing industry and tire burning

- Concerned that Holcim will receive significant tax credits for the installation of the tire insertion equipment. The EIS should discuss the tax breaks on the sale of cement because it uses "recycled materials"

- Correct the demographic information presented in the EA. EPA ECHO web site says there are 38 housing units and 86 people living within a three mile radius of the plant.

- The statement describing the nearest off-site resident as "approximately 1 mile east of the Trident plant" is incorrect. Gallatin County records indicate that the Dimock residence is approximately one-half mile southeast of the stack and lies adjacent to the quarry.

- The EA states "revenue generated from the landfills that currently accept waste tires would be reduced." Would this reduction in revenue be significant enough to these businesses to result in higher waste collection fees for local municipalities? Will this decrease in revenue result in only a minor impact to Gallatin County? Please elaborate on the specific Montana landfills that would be impacted, the extent of the reduction in revenue, and the impacts this would have on local municipalities.

Agriculture and Organic Farming

- The burgeoning organic agriculture sector could be adversely impacted by emissions from the plant

- The EA says that Wheat Montana fields are 10 miles away. In fact they are only 2 miles away. Aerial photo's show agricultural production very near the plant

- The EA addresses laws governing organic farms but makes no mention of the fact that organic farms may chose to move or shut down. The farming and ranching economy of the area could suffer

- The Certified Seed Potato industry is centered in the Manhattan-Churchill-Amsterdam area. What assurances are there that there will be no negative impacts on those farmers

- In order to be certified organic, the rule is that the threshold is five percent of the EPA limit on any substance. Need to know cumulatively when that five percent threshold will be reached on affected land

- We are extremely disappointed in the DEQ's analysis of the effects this project would have on agricultural production. This project has the potential to significantly impact

agricultural and dairy production near the plant. The wholesale dismissal of these concerns fails to meet the minimum requirements for analysis under MEPA.

- The discounting of impacts to organic farming is also inappropriate.

- The EA should include a detailed explanation of the analysis of impact of heavy metal and other HAPs emissions on nearby plant and animal materials, including manure, to ensure that an organic farmer would be able to continue to adhere to these sections of the national organic program. There must be an analysis of the impact of atmospheric deposition of metals in soils and increased concentrations of metals in water used for irrigation on plants and animals. Waste products (compost or manure) impacted by deposition an/or irrigation water must be shown not to contain heavy metals sufficient to further contaminate soil or water or crops if applied as a nutrient. Due to the persistent nature of heavy metals, this analysis should consider a long-term time frame. The cumulative impacts of many years of deposition plus the impact of these metals being turned back into the soil each year through compost and manure application must be considered.

- The statement concerning the distance of Wheat Montana's wheat fields from the plant is incorrect. Wheat Montana's fields are 2 miles from the Trident facility, not 10 miles away.

- The EA states that the USDA has not developed organic farming standards for metals in soil or water. The USDA National Organic Program does have regulations regarding the potential for heavy metal contamination of soil and water from the application of contaminated compost or manure. The potential for metals contamination of soil and water from this pathway over time must be addressed in this section.

Fire Issues

- Stockpile of tires present a risk of spontaneous fires

- Storage containers must be specified along with fire mitigation procedures

- Fire mitigation procedures have not been developed and brought to the attention of the Three Forks and Bozeman fire departments

- Costs of training the Gallatin County haz-mat team for a possible tire fire should be born by the facility not the taxpayer

- There should be a formal written fire plan

- How would fire be dealt with? Is the Three Forks Volunteer Fire Department equipped to handle a tire fire? If not who would be called to fight the fire and what

would the response time be? Would the fire fighters need special training and who would pay for such training?

- Provide a detailed fire plan

MEPA Considerations

- Conduct a full study of the risks (a full Environmental Impact Statement)
- Allow for as much public input as possible
- Enforce the existing laws to protect our clean air
- The scope of the assessment (EA) is much too small and the uncertainty of the risks is underestimated
- DEQ should prepare a full EIS
- I live in the Gallatin Valley and can see the stack emissions in the distance from my elevated location southeast of Bozeman. I oppose the draft air quality permit and urge an EIS be prepared.
- Gallatin City-County Health Department voted unanimously and issued a resolution to request DEQ to prepare an EIS
- Montana history has shown numerous deleterious effects resulting from toxic emissions settling on properties downwind of emitting smoke stacks e.g. Anaconda Mining. Would seriously consider taking my business and moving from Bozeman if Holcim is granted permission to burn tires
- A thorough and comprehensive EIS must be prepared on Holcim's proposal to burn tires in it's Trident cement plant
- Much of Montana's economy is fueled by our states reputation for clean air and water and open spaces and abundant natural resources. These attributes are key to our economic future and we do not want to see an erosion of these qualities for the benefit of a single industry
- There seems to be an "industrial zoning" issue as Holcim now proposes a new use for the plant that is not compatible with surrounding property and business owners in the valley who had no intention of acquiring property adjacent to a toxic tire burning plant . This is often described as an "existing non-conforming use" whereby the plant is "estopped" from conducting a tire burning operation
- Tires should be burned if it can be done safely instead of landfilling them
- Need a cost /benefit analysis

- DEQ has relied solely on emission information and parameters. Need independent assessment of parameters

- A cost/benefit analysis should be conducted to evaluate trade-off's associated with human health, agriculture and tourism

- It is practically impossible for other knowledgeable reviewers to check the accuracy of the findings. It is essential to show your work if you want to convince the public that this proposal poses no more than a negligible risk. Only a completely new and transparent analysis using valid data and justified assumptions will earn the public trust

- MEPA requires that the EIS analyze the economic impacts of a no action alternative on the businesses in the valley

- The cost of the EIS should be borne by Holcim not the State of Montana

- I support the burning of tires for fuel at the Holcim plant

- What size of bond is Holcim willing to post to guarantee their claims of success in clean toxic burning?

- The most appropriate comparison for the Holcim Plant would appear to be the results for the Holnam plant at Clarksville, MO since the plant is burning 10 to 15% tires as fuel with the remained a coal/coke mix and it is a wet process facility with an ESP as the pollution control device

- DEQ should study only those impacts that are relevant to Holcim's permit. The DEQ should concern itself only with what is in Montana's substantive laws. Time should not be spent studying what there are no standards for and thus avoid creating bogus concerns that can then be used by those that simply oppose this type of project

- The two most important sections in MEPA for DEQ to consider are the cumulative impact analysis and the analysis of alternatives

- It will be unacceptable for the EIS to provide information in a way that simply references Holcim's permit application

- All references to "tire-derived fuel" should be changed to "whole tires," as the two are not technically synonymous.

- The objective for the project states that the purpose is "to provide lower operating costs and increase operational flexibility" (Draft EA, p.1). If this is true, DEQ must conduct an environmental impact statement and study whether switching to a dry-process kiln would provide greater efficiency.

- Please explain how DEQ established that 15% of the plant's energy use was equivalent to more than 1 million tires. If so, why did DEQ not require, or at the very least consider requiring, the company to use most energy-efficient tire-derived fuel (shredded tires with the steel belts removed)? If the objective of the project is to provide lower operating costs for the kiln, DEQ should analyze this information to see if it does in fact provide the lowest operating costs with the lowest emissions.

- The DEQ has failed to provide the public with enough information, calculations, justified assumptions, or analyses with which to review the agency's decision. There is simply insufficient information to know how the DEQ analyzed mercury deposition and other HAP emissions. Until transparent calculations and justified assumptions are provided, the public has no way to adequately review this analysis.

- This is supposed to be an EA for the solid waste license as well as the air permit, yet there is no information about CKD disposal and the potential change in its characteristics due to tire burning.

- We are extremely disappointed in the DEQ's analysis of the effects this project would have on agricultural production. This project has the potential to significantly impact agricultural and dairy production near the plant. The wholesale dismissal of these concerns fails to meet the minimum requirements for analysis under MEPA.

Air Permit Issues

- The permit application (Holcim's) is not sufficiently detailed to allow DEQ to assess the known and potential environmental impacts of the proposed project

- The limits on hazardous metals emissions are unaccountably high. The hourly emissions rates set in the preliminary permit amount to 130 pounds of lead emissions per year and 89 pounds of mercury emissions per year. The limit on hexavalent chromium, which is extremely toxic does not take into account the limit set for this hazardous pollutant in Holcim's glass permit. The impacts of these enormous amounts of hazardous emissions have not been sufficiently addressed in the risk assessment.

- Re; Testing Requirements " Holcim shall conduct a source test on the kiln… without using tires as fuel to establish a baseline of the emissions" Question: What will be the fuel mixture at the time of the test? " Holcim shall conduct a source test on the kiln.. while using tires as part of the fuel mixture" Question: What percentage of the mixture will be tires?

- DEQ should formalize Holcim's current policy of annual dioxin and furan testing as a permit condition

- The details of the emission monitoring plan and protocols and history of enforcement should be provided.

- Differences between plant performance using tire derived fuels (TDF) versus whole tires

- Effects of inadequate inventory control over tires received by Holcim, specifically the failure to address the effects of burning older tires

- Holcim's application to MDEQ does not contain empirical or modeled data on all of the hazardous air pollutants from facilities that have the same process type and fuel Composition as the proposed process. The Park County incinerator is the only facility in Montana that is permitted to burn tires and it was permitted in 1981 prior to current and more comprehensive air quality regulations

- Testing for existing emissions must be conducted before the DEQ issues a permit for the burning of tires

- An accurate and comprehensive BACT analysis must be conducted

- Conduct thorough independent analysis of available BACT options

- An hourly average temperature requirement is problematic. The temperature could fluctuate wildly over the course of an hour, and although the average temperature could be maintained, proper combustion of the tires could be greatly diminished. Holcim has a history of failing to properly control the combustion process of its Trident kiln, as reflected in Holcim's 2002 malfunction report, which indicated that the plant experienced upset conditions 6.2% of operating time. A more appropriate permit condition would be to require the constant maintenance of the combustion temperature, with the condition that if the burning zone temperature drops below 2100 degrees F, insertion of tires into the kiln must cease immediately.

- Did the DEQ make any attempt to characterize or quantify emissions that would result from combustion conditions that are well below 2100 degrees F, as could well occur if the temperature requirement is simply an average temperature instead of an absolute? Please discuss the analysis that went into making this decision, what temperature was assumed for quantifying emissions, and what low temperature was used for quantifying emissions and the duration of that subopitimal temperature. It seems particularly important to immediately cease feeding tires in to the kiln when a power surge or a fuel feed malfunction occurs.

- Holcim's application (Oct. 2001, Appendix B (2.3), p.5) states that temperatures at the tire insertion point will range from 1700-1900 F. Because the DEQ has not required Holcim to provide details of a proposed tire insertion system, it is not possible to know if this is accurate. In the Enlibra document prepared by Holcim in 2001, it was stated that the burning zone temperatures ranged between 2192 and 2750 degrees F. Holcim provided that information. Please explain what independent information DEQ is relying on to establish that the appropriate burning zone temperature is 2100 degrees F given that other sources have relied upon different figures.

- These limitations are on stack emissions only. Have emissions from the clinker cooler, and the clinker cooler bypass been characterized? The Emission Inventory in permit #0982-09 lists clinker cooler particulate emissions at 27.6 TPY. Have clinker bypass emissions been quantified and considered in the health risk assessment? Please explain this limitation and state whether the analysis that was conducted for each of these pollutants included emission from sources other than the stack, and if so, how those emissions were quantified.

- The higher NOx limit (1,568 lb/year) was calculated based on assumptions of 25% petroleum coke and 75% Syncoal. The Holcim Trident plant now has no limit on the amount of coke it can burn, and the use of coke as fuel is known to significantly increase NOx emissions. It seems reasonable to assume that NOx emissions would now surpass the limit based on 25% coke. What is more, the air modeling done by Holcim shows that indeed emissions resulting from tires would place the facility in violation of the MAAQS, it appears that is why the lower limit of 1,350 lb/year has been established in this permit. However, there is absolutely no reason to believe that Holcim can comply with this limit given its current fuel mix, let alone with tires added to the mix. The department needs to completely re-evaluate Holcim's potential NOx emissions.

- The emissions limits on dioxins and furans should specifically reference the NESHAP PC-MACT regulations (40 CFR 63, Subpart LLL). The PC-MACT specifically applies the dioxin and furan limits to both the kiln stack and the alkali bypass. This permit provision refers only to the kiln stack emissions. Please explain and correct.

- The calculations for deriving the limits on emissions of CO must be included in the permit or the permit analysis. How will the public know whether this figure is reasonable or whether the calculations are correct if they are not allowed to review he department's analysis? Furthermore, the limit on CO must be calculated on at least a daily, and an hourly basis.

- Three hazardous air pollutants wee the focus of a risk assessment the department conducted for air quality permit #0982-07, which allowed Holcim to use recycled glass as a feed material in its kiln. One of those substances, chromium, is a hazardous metal of concern in this permit as well. The estimated emissions for chromium under the glass incineration scenario should have been included in the current risk assessment analysis. The October 3, 2001, submittal (the original application) states, "As required in ARM 17.8.706 (5)(e), projected HAP emissions resulting from the use of recycled glass will be addressed in the HRA [health risk assessment] required for TDF combustion." However, the emissions limit for hexavalent chromium appears to be no greater than the amount that would be emitted by either glass or tires, but not both. Furthermore, there is no limit on trivalent chromium, which was a pollutant of concern in the glass permit. Please explain how the previous risk assessment for the addition of recycled glass to the Trident kiln was factored in to this risk assessment.

- This permit is seriously flawed because it allows a fixed increase in hazardous pollutants such as lead, mercury, arsenic, and chromium without examining the existing baseline level of these pollutants. It appears that no analysis has been conducted to ascertain whether the combination of the existing toxic emissions and the incremental increases from the burning of tire will constitute a negligible risk.

- Holcim's internal policy, as stated by Holcim's Nicole Prokop at the May 14, 2003 Gallatin County Board of Health meeting, is to test annually for dioxins and furans. That policy should be formalized as a permit condition.

- Please provide the calculations necessary to determine total fuel heat input of whole tires. The Btu value of whole tires is significantly different from the Btu value of shredded or crumbed tires, and this issue has been a source of controversy throughout the permitting process. It is absolutely necessary to specify the accurate Btu value of whole tires in order to verify compliance with the terms of this permit.

- Please explain how the economic analysis determined that pertinent pollution control equipment was too expensive. What factors did the department use to support its finding that the cost effectiveness of this technology is greater than industry norms. Do other states or the EPA rely on the same factors to calculate acceptable costs?

- The statement that "particulate matter (PM) and total hydrocarbons (THC)… would not likely increase from the use of tire-derived fuel" is not justified by facts in Holcim's application submittals. Many other test burns, including the additional test burns that Holcim supplied for the purpose of determining HAPs emissions, support the view that particulate matter and volatile organic compounds do indeed increase significantly with the burning of tire, particularly with the mid-kiln insertion of whole tires in a wet-process kiln. Holcim has not provided adequate or valid data to support their point of view.

- The information provided in Table F-1 on criteria pollutants is insufficient because it provides almost no data on facilities burning whole tires in wet kilns with a similar fuel composition to the Holcim Trident plant. Without that information, it cannot be assumed that Holcim's proposal can meet air quality standards.

- On page 23, the permit states, "An hourly NOx emission limit would be added to the permit to ensure modeled compliance with the ambient air quality standards." This statement appears to contradict the finding in Table F-1 that NOx emissions would likely decrease through the use of tires as fuel and implies that Holcim is currently in violation of ambient air quality standards for NOx. We assume that this is why a second, lower hourly limit for NOx was established. However, there is no reasonable expectation that Holcim can comply with this new limit, especially given the fact that the facility has no limit on the amount of petroleum coke it can burn in its kiln.

- Table F-3 appears to show that Holcim would violate the NO2 MAAQS with the burning of tires (and may indeed be currently violating the MAAQS). The figures for total concentrations of NO2 emissions rely upon an "ozone limiting method" to

assure that both the hourly and the annual and hourly NO2 total concentrations would not violate the MAAQS. Please explain this discrepancy and how the use of the "ozone limiting method" seems to exempt Holcim from complying with the MAAQS for NO2.